AMENDMENTS TO THE DRAWINGS

The drawings are objected to because Figs.1-3 illustrate prior art. The drawing sheets of Figs. 1-3 have been corrected by adding a legend of "Background Art". Approval of this amendment is respectfully requested. "Replacement Sheet" for the drawings being amended can be found in the Appendix. No new matter has been added.

REMARKS

The specification has been amended to correct informalities. Claims 10-11 and 14-15 have been amended to include the limitation of "a fiber with a length of 10 mm or less and a major axis of 100 μm or less". Support can be found on page 20, lines 21-22, for example. No new matter has been added. Applicant respectfully requests entry of the amendments and reconsideration of the present application in view of the amendments and the following remarks.

Objection to the Drawings

The drawings have been objected to because Figs. 1-3 illustrate prior art. The drawing sheets of Figs. 1-3 have been corrected by adding a legend of "Background Art", thereby obviating the objections.

Specification

The specification has been amended to amend informalities of which Applicant becomes aware.

Claim Rejections under 35 U.S.C. § 103

Claims 10-19 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fleischer et al (US6225009) in view of Miyake et al (US6461772). Claims 10, 11, 14, and 15 are independent and have been amended to clarify the subject matter recited therein. Claim 10 recites:

> 10. An electrochemical cell which comprises a cathode containing a proton-conducting compound as an electrode active material, an anode containing a proton-conducting compound as an electrode active material and an electrolyte containing a proton source, wherein at least one of the cathode and the anode is an electrode comprising a proton-conducting compound and an anion-exchange resin, **the anion-exchange resin being a fiber with a length of 10 mm or less and a major axis of 100 μm or less**, and wherein **the electrolyte is an aqueous solution containing a proton-ionizing electrolyte**.

Due to the above configurations, the anion-exchange resin contained in the electrode can trap anions in the electrolytic solution, so that a reaction of the electro active material with the anions as a dopant can be controlled (*Specification* at page 14, lines 16-19), and the

electrochemical cell can significantly improve cycle-life properties and high-speed charge/discharge properties. See for example Examples 1, 7, 8, 18, 19, and 20 (a length of 10 mm or less and a major axis of 100μm or less), as compared with Examples 10 and 15 (granular), wherein an aqueous electrolyte was used.

The Office action states: "Fleischer et al. embodies several of electrolytes, where in at least some are inherently proton source containing and proton-ionizing." *Office action* at page 4, lines 6-8. However, Fleischer states, for example:

> The present invention solves the deficiencies of the prior art, and thereby distinguishes itself from the prior art, by using **a non-liquid electrolyte** *** (col. 3, line 64 +, emphasis added)
>
> This invention is also an improvement over the prior art since high cell voltages are achieved with **a non-liquid proton conducting electrolyte** *** (col. 4, line 14 +, emphasis added)
>
> The present invention possesses advantages over the conventional metal/hydride battery. For example, since there is **a non-liquid electrolyte** in a cell according to the present invention, *** (col. 4, line 52 +, emphasis added)

In contrast, in claim 10, a solution electrolyte is used. Since a "solution" is not "non-liquid" and upon reading the reference, one of ordinary skill in the art would be directed away from using a solution electrolyte, Fleischer teaches away from using a solution electrolyte (*Optivus Technology, Inc. v. Loma Linda University Medical Center* (469 F.3d 978 (2006 U.S. App.), "[a] reference may be said to **teach away** when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant."). The Office action fails to consider the above.

The Office action further states: "Fleischer et al. do teach that the anion exchange resin is a fiber." *Office action* at page 5, line 17. However, the statement appears to be in error, and it should be "Fleischer et al. do **not** teach that the anion exchange resin is a fiber" since Fleischer in no way teaches an anion exchange resin which is a fiber.

With regard to a "fiber," the Office action states: "Miyake et al. teaches a battery diaphragm (separator) with chemical resistance, mechanical strength, and ion selective permeability (ion exchange for cation and/or anion purposes) (col.1, lines 23-34). It is noted that within this ion-exchange diaphragm that fibers are used (col.7, lines 23-34). The motivation for

having fibers within an ion exchange membrane is that it mechanically strengthens the ion exchange resin (col.7, lines 29-33)." *Office action* at page 5, line 17 through page 6, line 3.

However, the Office action omits several points:

First, in Miyake, an anion-exchange resin is not a fiber. In Miyake, **PTFE porous film of fine fibers** (a non-woven fabric) is impregnated with a monomer compound of the ion exchange resin, and then the ion exchange resin filled into the porous structure between the fibers is polymerized to form the complex. *Miyake*, column 7, lines 23-34 and column 3, lines 43-53. The ion exchange resin and the substrate resin are different, and it cannot be said that the ion exchange resin is a fiber. Therefore, Miyake gives no indication of the anion-exchange resin to be a fiber as recited in the independent claims.

Second, as described above, in Miyake, the fibers mean a non-woven fabric (a porous film), and the fabric is impregnated with a monomer compound of the ion exchange resin. Thus, the ion exchange resin cannot be the fiber with **a length of 10 mm or less and a major axis of 100 μm or less** as recited in claim 10. With the recited fiber sizes, the anion-exchange resin fibers of the claimed invention are dispersed in the electrode active material (page 18, lines 12-15), which is very different from the non-woven fabric disclosed in Miyake. The structure of Miyake is dissimilar and irrelevant to the structure recited in claim 10.

Third, the Office action states that the motivation for having fibers within an ion exchange membrane is that it mechanically strengthens the ion exchange resin. However, the ion exchange resin which is mechanically strengthened is clearly dissimilar and irrelevant to the fiber with **a length of 10 mm or less and a major axis of 100 μm or less** as recited in claim 10, and the above motivation is irrelevant.

Fourth, in Miyake, a non-woven fabric is used in a separator, not an electrode. Miyake's separator requires additional strength with a monomer compound of the ion exchange resin because Miyake uses a non-woven fabric having porous structure between fibers (column 3, line 53). There is no evidence that an electrode and a separator have a similar structure, and the electrode requires additional strength.

In view of the foregoing, a combination of Fleischer and Miyake cannot lead to claim 10. Further, the results due to the configurations recited in claim 10 (excellent cycle-life properties

and high-speed charge/discharge properties) are not taught by Fleischer or Miyake and cannot b predictable therefrom.

At least for the above reasons, claim 10 cannot be obvious over Fleischer and Miyake. Claims 11, 14, and 15 recite the same limitations as discussed above. Thus, at least for the same reason, claims 11, 14, and 15 also cannot be obvious over Fleisher and Miyake. Claims 12-13 and 16-19 depend ultimately from one of the independent claims, and thus at least for this reason, the dependent claims also cannot be obvious over the references. The remaining rejections are moot.

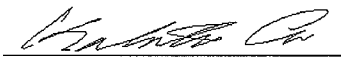
CONCLUSION

In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: January 14, 2008 By: 

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